AMENDMENTS TO CLAIMS

Claims 1-11 are being amended. All pending claims are reproduced below, including those that remain unchanged.

1. (Currently Amended) A laser driver integrated circuit (LDIC) ~~to drive a laser diode that is located on an optical pick up unit (OPU) with the LDIC~~, the LDIC including:

an automatic power controller (APC) ~~to control an output of the laser diode to compensate for changes in characteristics of the laser diode~~;

a running optical power controller (ROPC) ~~to control the output of the laser diode to compensate for variations in an optical media~~; and

a write strategy generator (WSG) ~~to implement write strategies~~;

wherein said APC, said ROPC and said WSG are all included in the LDIC;

wherein the LDIC is configured to be located on an optical pickup unit (OPU) and to drive a laser diode that is located on the OPU with the LDIC;

wherein said APC is configured to control an output of the laser diode to compensate for changes in characteristics of the laser diode;

wherein said ROPC is configured to control the output of the laser diode to compensate for variations in an optical media;

wherein said WSG is configured to implement write strategies; and

wherein ~~the~~ said APC and said ROPC each include there own dedicated offset, gain and sample and hold circuitry, thereby reducing an amount of analog signals to be sent over a flex cable between the OPU and a main board.

2. (Currently Amended) The LDIC of claim 1, wherein ~~the~~ said APC is adapted to receive power control signals over the flex cable that connects the OPU with a controller on the main board, and wherein the LDIC determines a current for which to drive the laser diode, based at least in part on the power control signal.

3. (Currently Amended) The LDIC of claim 2, wherein ~~the~~ said APC and said ROPC are used by the LDIC to determine the current for which to drive the laser diode.

4. (Currently Amended) A chip-set, ~~to be located on an optical pick-up unit (OPU) that can communicate with components on a main board over a flex cable, the chip-set~~ comprising:

a laser driver integrated circuit (LDIC) adapted to drive a laser diode, ~~the~~ said LDIC including[[:]] an automatic power controller (APC)[[;]] and a running optical power controller (ROPC); and

a power monitor integrated circuit (PMIC) to monitor the laser diode, ~~the~~ said PMIC including its own dedicated offset, gain and sample-and-hold circuitry; and

a photo-detector integrated circuit (PDIC) to detect light produced by the laser diode after the light has been reflected from an optical media, ~~the~~ said PDIC including its own dedicated offset, gain and sample-and-hold circuitry;

wherein the chip-set is configured to be located on an optical pick-up unit (OPU) that can communicate with components on a main board over a flex cable.

5. (Currently Amended) The chip-set of claim 4, wherein ~~the~~ said LDIC further comprises a write strategy generator (WSG) to implement write strategies.

6. (Currently Amended) The chip-set of claim 5, wherein ~~the~~ said WSG implements write strategies by controlling ~~the~~ said offset, gain and sample-and-hold circuitry of ~~the~~ said PMIC and ~~the~~ said PDIC, without requiring communications over the flex cable.

7. (Currently Amended) The chip-set of claim 4, wherein ~~the~~ said offset, gain and sample-and-hold circuitry of ~~the~~ said PMIC and ~~the~~ said PDIC are controlled by a write strategy generator (WSG) located on the main board.

8. (Currently Amended) The chip-set of claim 4, wherein:

~~the~~ said automatic power controller (APC) controls an output of the laser diode to compensate for changes in characteristics of the laser diode; and

~~the~~ said running optical power controller (ROPC) controls the output of the laser diode to compensate for variations in an optical media.

9. (Currently Amended) The chip-set of claim 8, wherein ~~the~~ said APC receives power control signals over the flex cable, and wherein ~~the~~ said LDIC determines a current for which to drive the laser diode, based at least in part on the power control signal.

10. (Currently Amended) The ~~LDIC~~ chip-set of claim 9, wherein ~~the~~ said APC and said ROPC are used by ~~the~~ said LDIC to determine the current for which to drive the laser diode.

11. (Currently Amended) A laser driver integrated circuit (LDIC) ~~to drive a laser diode that is located on an optical pick-up unit (OPU) with the LDIC~~, the LDIC including:

an automatic power controller (APC) ~~to control an output of the laser diode to compensate for changes in characteristics of the laser diode~~;

a running optical power controller (ROPC) ~~to control the output of the laser diode to compensate for variations in an optical media~~; and

wherein the APC and the ROPC and both included in the LDIC;

wherein the LDIC is configured to drive a laser diode that is located on an optical pick-up unit (OPU) with the LDIC;

wherein said APC is configured to control an output of the laser diode to compensate for changes in characteristics of the laser diode;

wherein said ROPC is configured to control the output of the laser diode to compensate for variations in an optical media; and

wherein ~~the~~ said APC and said ROPC each include there own dedicated offset, gain and sample and hold circuitry, thereby reducing an amount of analog signals to be sent over a flex cable between the OPU and a main board.